

In order to throw the spray upon the trees it is necessary to have a force pump made for the purpose. This should be of sufficient capacity to enable the operator to work without severe fatigue, for at best it is hard work. The cylinder should be not less than two and a half inches in diameter, with a stroke of five inches in length, and the handle long. It is also important that the working parts should be of brass, or at least brass lined, for the action of the chemicals soon corrodes the iron. When spraying with the Bordeaux mixture, or with Paris-green, it is very important to keep the liquid constantly stirred so that the lime and Paris-green may not settle at the bottom. One spraying pump is provided with a small pipe, through which a continuous stream is forced against the bottom of the barrel by the pressure from the air chamber, to keep the lime or Paris green, or both when used together well suspended in the water. Whether this result is attained satisfactorily, the writer is unable to say, never having used or seen one in operation.

The best nozzle is that known as the Vermorel nozzle. It is provided with a spindle which can be thrust forward by pressing the thumb upon a button to clear the vent from any obstruction, and which is drawn back by a spring the instant the thumb is removed. This nozzle produces the finest vapor spray, and does not use up half as much liquid to cover a given surface, as other nozzles. The spray can be thrown with this nozzle a distance of fifteen feet, not more; but a solid stream can be thrown a distance of forty feet, when such a stream is required, by unscrewing the Vermorel attachment.

After using the pump in spraying, always pump clear water through it and the hose and nozzle; else the lime will harden in the working parts and cause great trouble.

SOME INJURIOUS INSECTS.

If the apple trees are infested with leaf-eating worms, such as the canker worms, *Anisopteryx vernata* and *pometaria*; the yellow-necked caterpillar, *Datana ministia*; the red-humped caterpillar, *Edemasia concinna*; all such can be poisoned by spraying the trees with Paris green in water in the proportion of one pound of Paris green to two hundred gallons of water. The tent caterpillars, *Chisiocampæ Americana*, are more easily destroyed by capturing them when they are in their tent, where they are sure to be in the early morning, at mid-day if the sun shines bright, and at evening. The fall web-worm, *Hyphantria textor*, keeps within its web until it has nearly attained its full growth and therefore can be easily captured at any time of day. Sometimes the forest tent caterpillar, *Chisiocampa sylvatica*, invades our orchards; when it does it usually comes in countless numbers, and can be best destroyed by spraying with Paris green.